133 the mountain streams which discharge into the lake are perennial, which is not the case on plateaux bordered by lower hills. Against this advantage must be set the strong winds which prevail in winter, due to the juxtaposition of a high mountain and a large sheet of water.

The area of good land is also diminished by the wide "fans" of rock-encumbered soil discharged by the mountain torrents at the point where they debouch on to the plain. This accumulation of boulders and detritus forms a continuous belt about a mile wide of rocky sloping land along the foot of the mountain. It has some value as grazing
312 land, but cannot be cultivated. As the streams leave the lower slopes they are carefully canalised and broken up into an infinity of small channels which distribute water to every plot of ground between the hill slopes and the lake shore. This work of irrigation, undoubtedly of great antiquity, has transformed what must once have been a marsh into a carefully graded series of terraces sloping almost imperceptibly to the lake. As a result the Min Chia farmer is really independent of the monsoon, for he can flood his rice fields from this system of water channels, fed by the perennial streams from Ts'ang Shan.

312 Curiously enough it is the land nearest the shore of the
134 lake which has most to fear from a late monsoon. The level of the lake varies as much as six feet between the dry season and the end of the rainy season, consequently in spring the water is some four to five feet below the level of the adjoining rice fields, which cannot be flooded from this source. As the fields nearer the mountain slopes tend to absorb all or most of the water from the mountain torrents, it sometimes happens that if the monsoon is late the fields nearest to the lake cannot be planted with rice until as much as three weeks after those nearer the mountain. The area adjoining the lake is further subject to some danger of

1: Fitzgerald H-5 (1937-1938) AE3 Sino-Tibetan
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312 flooding in very wet years, when the water of the lake, un-
134 able to escape through the very narrow passage of the Dragon's Tail Pass, overflows on to the flat western shore. Unless the flood becomes so deep as to cover the ears of rice, this does no harm, and such exceptional depths are rare. Yet on account of these two risks the land nearest the lake shore, in appearance the best on the plain, is in fact of less value than fields nearer the mountain slopes.

134 Unlike almost all other parts of Yunnan the soil of the Ta Li plain is not the red clay associated with the prevailing Yunnan limestone rocks, but a heavy black soil due to the fact that Ts'ang Shan is an upthrust of granite breaking
133 through the limestone cap of the Yunnan plateau. This geological peculiarity has one serious disadvantage, the frequency of severe earthquakes on the Ta Li plain. Slight shocks are common in the dry season, especially after one of the winter spells of drizzle, but a major earthquake in the spring of 1925 not only destroyed most of the city of Ta Li but caused much greater havoc and a very heavy loss of life in the lakeside villages, where a wave from the lake did further damage. Local records mention other severe earthquakes in previous centuries, but for many years before 1925 no serious shock had occurred, nor has there been a major earthquake since that date.

311 Apart from a narrow belt of willow groves along the lake shore, where flooding is usual, the entire surface of the plain is under cultivation. The villages as far as possible are built on the shore itself, or on the lowest slopes of the mountain, to free as much land as possible for the cultiva-
[491] tion of rice. Even the main caravan road, a stone-paved path about six feet wide, skirts the slopes of the mountain, and the paths leading to villages and fields are narrow and follow the dykes along irrigation channels. Very little land is devoted to market gardening, usually only such patches by

1: Fitzgerald H-5 (1937-1938) AE3 Sino-Tibetan
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313 nightly markets in Ta Li. The cedars in the rain forest which begins near 13,000 ft. and continues to the crest are cut for building timber to some extent. As they grow on steep and often almost sheer slopes and precipices, much of the timber cannot be cut, or if cut cannot be fetched down. This industry is therefore very limited, and the lengths obtainable small. Large beams for house building and boat building are more easily obtained from the forests on Chi Tsu Shan, the mountain behind the eastern shore of the lake.

824 261 The Min Chia see no value in the many wild fruits which grow on Ts'ang Shan and no attempt to cultivate them or even to gather the wild fruit for sale, is made. Soft fruit such as raspberries, of which there are two excellent wild varieties, could not be transported to a distant market, and as the people of Ta Li and the villagers themselves have never considered them edible, there is no local market.

313 In recent years the *hsien* government, which acts as trustee for such public land as the mountain, has done something towards reafforesting the lower slopes with pines. Much of the ancient pine forest has been cleared by woodcutters, but re-planting undertaken within the last twenty years has restored the lower slopes to forest, and strict licensing of wood cutting is now enforced. On the other hand no attempt has been made to exterminate or even reduce the wolves which infest Ts'ang Shan and not only prey upon the small flocks of sheep, but also raid the villages of the plain 312 for pigs and chickens. The main value of Ts'ang Shan, in Min 316 Chia eyes, is as a source of perennial streams for irrigating the rice land, its secondary value as the source of the famous Ta Li marble for which the city is known all over China.

226 If the mountain is neglected, the possibilities of the lake both for fishing and transport are fully realised. The Erh Hai produces many kinds of fish, for which there is a ready sale in the city and villages. Every lake-side village is a fishing

1: Fitzgerald H-5 (1937-1938) AE3 Sino-Tibetan
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312 As the city lies at the foot of the high Ts'ang Shan range there is an abundant water supply. Small streams led off from the mountain torrents have been conducted into the city by tunnels under the walls and flow swiftly by the side of the lanes across the city from west to east. They are used as power for water mills, for washing clothes, and for irrigation, drinking water being obtained from numerous wells.
361 In the eastern half of the enclosure, where streams wind along among groves of willows, and farmhouses lie hidden among large shade trees and clumps of bamboo, the visitor is surprised, on seeing the city wall, to find that among these rural surroundings he is still within the city itself. Indeed, seen from a high point on the mountain, Ta Li with its creeper-clad walls and the dense groves of trees in the gardens looks more like a wood than a city, a huge walled garden set in the wide spaces of green, watery rice fields.

633 This rural character is well suited to a town which is in
438 fact entirely dependent on agriculture for its commerce and industries. The primary function of a small city such as Ta Li is to provide a market for the peasants and to act as a distributing point for the goods which the farming population need. It is also a centre where the richer families can live in a security which the open country did not always afford; where there are schools, law courts, government offices and the headquarters of an important military command. But though this apparatus of government gives an urban air to the town and nourishes a small trade in books, and other articles used by the educated minority, the rice standard really rules the city just as surely as it does the country village. The commerce of Ta Li depends on the price of rice and the industries cater for the needs of the peasants.

369 The interdependence between town and country is not
443 confined to trade, for the inhabitants of the town itself are largely farmers who also have homes in the country villages.

2: Rock, K-5 (1934-) 1947 AF16 Southwest China AF16
~ Sino-Tibetan Border AE3

CHAPTER IV

WESTERN AND NORTH-WESTERN YUNG-NING

1. AGRICULTURE, ACCESS AND INHABITANTS

Yung-ning 永寧

S ST 311 [161] S ST [24] [312]

The most important part of Yung-ning from an agricultural standpoint, is of course its plain (PLATE 220), which to-day supports 300 families, although 1,000 families could subsist there if rice were cultivated, and all arable land were utilized. Only one half of the plain is now under cultivation, and rice is prohibited from being grown for political reasons. Maize, barley, buckwheat and round peas are the main crops. The plain has a plentiful water supply, as the Hli gyi or K'ai-chi Ho 開基河 [also called Lo-chi Ho 勒汲河 pronounced Le-chi Ho in Yung-ning] winds through it, receiving several affluents in its course over the plain. The latter is at an elevation of 9,500 feet, is perfectly flat, and extends east to the foot of Lion Mountain (Seng-ge ga-mu). In the remote past the Yung-ning plain was undoubtedly a lake, similar to the Lu-ku Lake, which lies 100 feet higher. The plain is surrounded by mountains with many valleys debouching into it; the only outlet is the valley which leads into the Ch'ien-so country in Ssu-ch'uan. The eastern and north-eastern end of the plain is still marshy.

The next place of importance is the long Tsui-yi valley called Wa-erh-lo 挖耳羅 in Chinese, which extends south of Wua-ha Shan, west into the Yangtze. This is a very fertile valley and rice is planted in the middle upper half; the lower part is a dry, arid canyon with steep walls; the head of the valley is wooded.

To the west of Yung-ning is another long valley called Luĕ-dzu law-k'aw, which also extends into the Yangtze, with another valley joining it called Hĕr-dü, the Har-lĕr-dü of the Na-khi. These valleys unite a short distance before debouching west into the Yangtze, south of San-chiang-k'ou 三江口. The remaining arable land is along the Yangtze, especially at Pu-chio 卜卻 or Law-k'a-khi-llü [also called P'u-dyü]; then along the Zho Chhu on the Hsi-k'ang border in the west of Yung-ning, and at Pa-erh-ch'iao 壩耳橋, south of Yung-ning; and finally the few fields along the shore of the Lu-ku Hu or Yung-ning Lake.

The rest of the country is exceedingly mountainous. The highest peaks are on Wua-ha Shan, which is the northern part of the Yao Shan to the east of Yung-ning. These reach 15,500 feet or more in height.

S ST 131

Access. — The main approaches to Yung-ning from the south are from Yung-pei, north via Lang-ch'ü chou, the present Ning-lang 寧蒗; then from Li-chiang via the Yangtze at either T'o-lä-tsu or Chiang-wai 江外, up the Tsui-yi valley opposite Chiang-wai which is the shortest route. The northern route is via Feng-k'o 俸可 or Shang-feng-k'o 上俸可.

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